

Appin. No. 10/034,302
Docket No. 14XZ00124/GEM-0203

REMARKS / ARGUMENTS

Status of Claims

Claims 1-4 and 6-9 are pending in the application and stand rejected. Applicant has canceled Claims 3 and 4, has amended Claims 1 and 6, and has added new Claims 10-12, leaving Claims 1-2 and 6-12 for consideration upon entry of the present Amendment.

Applicant respectfully submits that the rejections under 35 U.S.C. §103(a) have been traversed, that no new matter has been entered, and that the application is in condition for allowance.

Rejections Under 35 U.S.C. §103(a)

Claims 1, 3, 6, 8 and 9 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Siczek et al. (U.S. Patent No. 5,526,394, hereinafter Siczek) in view of Osaki et al. (U.S. Patent No. 5,163,099, hereinafter Osaki) and further in view of Press et al. (NPL document, see PTO-892, hereinafter Press).

Regarding independent Claims 1 and 6, the Examiner acknowledges that Siczek does not expressly disclose the determining of N autocorrelations of the vector of luminous intensity values, performing the Fourier transform on the autocorrelation vector to obtain the energy frequency spectrum and comparing the energy value at the graduated marks with a threshold value, and looks to Osaki and Press to cure these deficiencies. Paper No. 04252005, pages 4-6.

Claims 2, 4 and 7 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Siczek in view of Osaki and further in view of Press as applied to Claim 1 above, and further in view of Baxes (NPL document, see PTO-892, hereinafter Baxes).

Applicant traverses these rejections for the following reasons.

Applicant respectfully submits that the obviousness rejection based on the References is improper as the References fail to teach or suggest each and every element of the instant invention. For an obviousness rejection to be proper, the Examiner must

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meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). The Examiner must meet the burden of establishing that all elements of the invention are taught or suggested in the prior art. MPEP §2143.03.

Regarding Independent Claim 1

Applicant has canceled Claim 3 and has amended Claim 1 to include all the limitations of Claim 3 and more, such that Claim 1 now recites, inter alia,

"A method of automatic detection of a graduated compression paddle used for breast analysis in digital mammography, the method comprising...

...

detecting the paddle; and

unambiguously distinguishing a densest area of the breast from an area of the paddle containing the graduated marks, thereby enabling automatic exposure adjustment based on a most glandular area of the breast;

wherein the acquisition of the image is carried out in an automatic mode, in which an adjustment of the exposure parameters is determined from a table of automatic optimization of parameters (AOP)."

No new matter has been added as antecedent support may be found in the specification as originally filed, such as at Paragraphs [0005], [0020] and [0031] for example. Dependent claims inherit all of the limitations of the parent claim.

Regarding the limitations of Claim 3, which are now included in Claim 1, the Examiner alleges that Siczek teaches the elements of the claimed invention. Paper No. 0425205, page 6. The Examiner has not applied Osaki, Press and Baxes in alleging obviousness of Claim 3. Applicant agrees with this position, and also submits that Osaki, Press and Baxes do not cure the deficiencies of Siczek in view of the instant amendment.

In addition to the limitation of Claim 3, Applicant also includes the limitation of *unambiguously distinguishing a densest area of the breast from an area of the paddle containing the graduated marks, thereby enabling automatic exposure adjustment based on a most glandular area of the breast*, submits that Siczek is absent any

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disclosure, teaching or suggestion of this limitation, and further submits that Osaki, Press and Baxes fail to cure this deficiency.

In Paper No. 04252005, page 3, the Examiner remarks that compression paddles are inherently graduated. However, Applicant submits that the claimed invention is not directed merely to graduated compression paddles, but to a method and apparatus for detecting the graduated marks so as to *unambiguously distinguish a densest area of the breast from an area of the paddle containing the graduated marks, thereby enabling automatic exposure adjustment based on a most glandular area of the breast*, which is not disclosed, taught or suggested by the cited prior art.

Regarding Independent Claim 6

Applicant has amended Claim 6 to now recite, inter alia,

"A device for automatic detection of a graduated compression paddle used for breast analysis in digital mammography, the device comprising...

...

means for detection capable of deducing the presence of the paddle from the result of the comparison, and unambiguously distinguishing a densest area of the breast from an area of the paddle containing the graduated marks, thereby enabling automatic exposure adjustment based on a most glandular area of the breast."

No new matter has been added as discussed above with regard to Claim 1. Dependent claims inherit all of the limitations of the parent claim.

For all the reasons set forth above with regard to Claim 1, Applicant submits that the claimed limitation of amended Claim 6 is not disclosed, taught or suggested by the cited prior art, taken either singly or in combination.

Regarding the inventions of both independent Claims 1 and 6, Applicant submits that the claimed inventions are not directed merely to graduated compression paddles, but to a method and apparatus for detecting the graduated marks so as to *unambiguously distinguish a densest area of the breast from an area of the paddle containing the graduated marks, thereby enabling automatic exposure adjustment based on a most*

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glandular area of the breast, which is not disclosed, taught or suggested by the cited prior art.

Here, Applicant is not merely claiming a digital scan apparatus or an imaging apparatus that uses the Fourier transform of the autocorrelation, but instead is claiming a specific method and device for automatic detection of *a graduated compression paddle*, so as to *unambiguously distinguish a densest area of the breast from an area of the paddle containing the graduated marks, thereby enabling automatic exposure adjustment based on a most glandular area of the breast*. Applicant not only finds Siczek to be absent any teaching or suggestion of *a graduated compression paddle, as claimed in the instant invention* so as to *unambiguously distinguish a densest area of the breast from an area of the paddle containing the graduated marks, thereby enabling automatic exposure adjustment based on a most glandular area of the breast*, but also finds Osaki, Press and Baxes to be absent any cure for this deficiency.

Absent a teaching or suggestion of each and every element of the claimed invention, the References cannot properly be combined to establish a *prima facie* case of obviousness.

Additionally, Applicant submits that paragraphs [0005], [0020] and [0029-0031] describe the problem addressed and solved by the instant invention and the benefits arrived at by implementing embodiments of the instant invention. Nowhere but in the instant application is the problem associated with the use of a graduated compression paddle in digital mammography recognized and solved, where the solution enables one to *unambiguously distinguish a densest area of the breast from an area of the paddle containing the graduated marks, thereby enabling automatic exposure adjustment based on a most glandular area of the breast*. Accordingly, Applicant submits that Siczek, Osaki, Press, and Baxes, or any combination thereof, lack any teaching of a problem-and-solution associated with the use of a graduated compression paddle in digital mammography, and therefore cannot properly be combined to establish a *prima facie* case of obviousness.

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In view of the foregoing, Applicant submits that the References fail to teach or suggest each and every element of the claimed invention and are therefore wholly inadequate in their teaching of the claimed invention as a whole, fail to motivate one skilled in the art to do what the patent Applicant has done, fail to recognize a problem recognized and solved only by the present invention, fail to offer any reasonable expectation of success in combining the References to perform as the claimed invention performs, and discloses a substantially different invention from the claimed invention, and therefore cannot properly be used to establish a prima facie case of obviousness.

In light of the foregoing remarks and amendments, Applicant respectfully submits that the Examiner's rejections under 35 U.S.C. § 103(a) have been traversed, that no new matter has been added, and that the application is now in condition for allowance. Such action is therefore respectfully requested.

Regarding New Claims 10-11

Applicant has added new Claim 10 that depends from Claim 1, and new Claim 11 that depends from Claim 6. Both Claims 10 and 11 include the additional limitation of "...comparing the energy value *at the spacing frequency of the graduated marks...*".

No new matter has been added as antecedent support may be found in the specification as originally filed, such as a Paragraph [0028] for example.

In alleging obviousness of this element in original Claims 1 and 6, the Examiner looks to Osaki at Column 2 lines 54-65. Paper No. 04252005, page 5.

In respectful disagreement with the Examiner, Applicant finds Osaki at Column 2 lines 54-65 to teach: "The power spectrum signal has a level which varies in relation to contrasting portions in the appearance of the object *at a specified time*, and is supplied to detecting means 13 through a data bus 12a. The detecting means 13 compares *the level of the power spectrum signal* with a reference signal level. In the event that power spectrum signal level is higher than a reference signal level, the detecting means 13 decides that a selected type of pattern, such as characters, exists on the object..." (Emphasis added). Here, Applicant finds Osaki to teach a *temporal variation* of the

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power spectrum signal, and not a comparison using the energy value *at the spacing frequency of the graduated marks*. Nowhere in Osaki does Applicant find any reference to the *spacing frequency of the graduated marks*, and the Examiner has not stated with specificity where such a teaching may be found.

Absent a teaching or suggestion of each and every element of the claimed invention that performs as the claimed invention performs, a prima facie case of obviousness cannot be established.

Accordingly, Applicant submits that Claims 10-11 are directed to allowable subject matter, and respectfully requests entry and notice of allowance thereof.

Regarding New Claim 12

Applicant has added new Claim 12, which is directed to subject matter similar to that of original Claim 1, but with limitations that now include, inter alia,

"...comparing the energy value *at the spacing frequency of the graduated marks* for each spectrum with a predetermined threshold value;

detecting the paddle; and

unambiguously distinguishing a densest area of the organ from an area of the paddle containing the graduated marks, thereby enabling automatic exposure adjustment based on a most glandular area of the organ."

No new matter has been added as antecedent support may be found in the specification as originally filed, such as at Paragraph [0020] disclosing the organ, and at Paragraph [0028] disclosing the spacing frequency, for example.

In view of comments already presented herein, Applicant submits that Claim 12 is directed to allowable subject matter, and respectfully requests entry and notice of allowance thereof.

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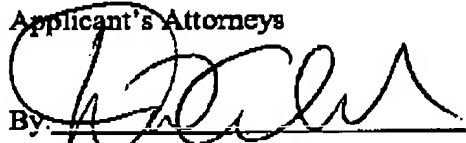
The Commissioner is hereby authorized to charge any additional fees that may be required for this amendment, or credit any overpayment, to Deposit Account No. 50-2513.

In the event that an extension of time is required, or may be required in addition to that requested in a petition for extension of time, the Commissioner is requested to grant a petition for that extension of time that is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to the above identified Deposit Account.

Respectfully submitted,

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